



# **Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments**

**Volume No.: 35**

**Subpart EE—Titanium Dioxide  
Production**

September 2009

## **Subpart EE—Titanium Dioxide Production**

**U. S. Environmental Protection Agency  
Office of Atmosphere Programs  
Climate Change Division  
Washington, D.C.**

## FOREWORD

This document provides EPA's responses to public comments on EPA's Proposed Mandatory Greenhouse Gas Reporting Rule. EPA published a Notice of Proposed Rulemaking in the Federal Register on April 10, 2009 (74 FR 16448). EPA received comments on this proposed rule via mail, e-mail, facsimile, and at two public hearings held in Washington, DC and Sacramento, California in April 2009. Copies of all comments submitted are available at the EPA Docket Center Public Reading Room. Comments letters and transcripts of the public hearings are also available electronically through <http://www.regulations.gov> by searching Docket ID *EPA-HQ-OAR-2008-0508*.

Due to the size and scope of this rulemaking, EPA prepared this document in multiple volumes, with each volume focusing on a different subject area of the rule. This volume of the document provides EPA's responses to the significant public comments received for 40 CFR Part 98, Subpart EE—Titanium Dioxide Production.

Each volume provides the verbatim text of comments extracted from the original letter or public hearing transcript. For each comment, the name and affiliation of the commenter, the document control number (DCN) assigned to the comment letter, and the number of the comment excerpt is provided. In some cases the same comment excerpt was submitted by two or more commenters either by submittal of a form letter prepared by an organization or by the commenter incorporating by reference the comments in another comment letter. Rather than repeat these comment excerpts for each commenter, EPA has listed the comment excerpt only once and provided a list of all the commenters who submitted the same form letter or otherwise incorporated the comments by reference in table(s) at the end of each volume (as appropriate).

EPA's responses to comments are generally provided immediately following each comment excerpt. However, in instances where several commenters raised similar or related issues, EPA has grouped these comments together and provided a single response after the first comment excerpt in the group and referenced this response in the other comment excerpts. In some cases, EPA provided responses to specific comments or groups of similar comments in the preamble to the final rulemaking. Rather than repeating those responses in this document, EPA has referenced the preamble.

While every effort was made to include significant comments related to 40 CFR Part 98, Subpart EE—Titanium Dioxide Production in this volume, some comments inevitably overlap multiple subject areas. For comments that overlapped two or more subject areas, EPA assigned the comment to a single subject category based on an assessment of the principle subject of the comment. For this reason, EPA encourages the public to read the other volumes of this document with subject areas that may be relevant to 40 CFR Part 98, Subpart EE—Titanium Dioxide Production.

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## SUBPART EE—TITANIUM DIOXIDE PRODUCTION

### 1. REPORTING THRESHOLD

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**Commenter Name:** Sarah B. King

**Commenter Affiliation:** DuPont Company

**Document Control Number:** EPA-HQ-OAR-2008-0508-0604.1

**Comment Excerpt Number:** 47

**Comment:** DuPont supports the Agency’s selection of reporting threshold for titanium dioxide (TiO<sub>2</sub>) production facilities (i.e., all chloride process facilities report). Since all facilities are estimated to exceed emissions of 25,000 metric tons CO<sub>2</sub>e by a substantial margin, this would maintain more consistency in requirements throughout the rule.

**Response:** We acknowledge the commenter’s support for the selected reporting threshold. We have retained the “all-in” threshold for titanium dioxide production facilities.

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**Commenter Name:** Lorraine Krupa Gershman

**Commenter Affiliation:** American Chemistry Council (ACC)

**Document Control Number:** EPA-HQ-OAR-2008-0508-0423.2

**Comment Excerpt Number:** 137

**Comment:** ACC supports the Agency’s selection of reporting threshold for titanium dioxide (TiO<sub>2</sub>) production facilities (i.e., all chloride process facilities report). Since all facilities are estimated to exceed emissions of 25,000 metric tons CO<sub>2</sub>e by a substantial margin, this would maintain more consistency in requirements throughout the rule.

**Response:** See the response to comment EPA-HQ-OAR-2008-0508-0604.1, Comment Excerpt Number 47.

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### 2. SELECTION OF PROPOSED GHG EMISSIONS CALCULATION AND MONITORING METHODS

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**Commenter Name:** Sarah B. King

**Commenter Affiliation:** DuPont Company

**Document Control Number:** EPA-HQ-OAR-2008-0508-0604.1

**Comment Excerpt Number:** 49

**Comment:** DuPont supports the use of coke consumption in determining process CO<sub>2</sub> emissions. However, we disagree that the carbon oxidation factor for calcined petroleum coke is 1. The calcined petroleum coke comes with impurities, and a certain amount of the calcined coke is returned to the ground as landfill along with components such as the un-converted TiO<sub>2</sub>. From our historical data, the actual carbon oxidation factor of calcined petroleum coke varies depending on production rate and conditions, but on average is about 80%. EPA should revise

the carbon oxidation factor to 0.8 and allow facilities to use the most appropriate factor for their process, with supporting documentation of its derivation available for EPA review as needed.

**Response:** The response to this comment has been provided in section III of the preamble to this rule (see section EE, Titanium Dioxide). The final rule maintains the assumption of 100% oxidation in order to be conservative and to be consistent with the default oxidation factor for petroleum coke specified in the IPCC Guidelines for National Greenhouse Gas Inventories<sup>1</sup>. Without supporting historical data on the carbon oxidation of calcined petroleum coke, EPA cannot accept the suggestion of 80% for the oxidation factor. Upon further research and evaluation of readily available data, EPA will consider allowing facilities to calculate a site-specific oxidation factor.

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**Commenter Name:** Sarah B. King

**Commenter Affiliation:** DuPont Company

**Document Control Number:** EPA-HQ-OAR-2008-0508-0604.1

**Comment Excerpt Number:** 48

**Comment:** § 98.313(b) – DuPont supports use of alternative emission estimates where continuous monitoring is not in use.

**Response:** We agree with allowing facilities the flexibility to use alternative emission estimates where continuous monitoring is not in use. We have retained the alternative methods and procedures to calculate CO<sub>2</sub> emissions from titanium production.

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### **3. MONITORING AND QA/QC REQUIREMENTS**

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**Commenter Name:** Sarah B. King

**Commenter Affiliation:** DuPont Company

**Document Control Number:** EPA-HQ-OAR-2008-0508-0604.1

**Comment Excerpt Number:** 50

**Comment:** In the Technical Support Document for TiO<sub>2</sub> (January 22, 2009), section 7 describes the excessive QA/QC requirements. This is different from what EPA has required for Toxic Release Inventory (TRI) program. It adds cost to the facilities and additional personnel need to be hired to do that.

**Response:** We acknowledge the commenter's concerns. First, we wanted to clarify that the Technical Support Document (TSD) does not include the final language regarding QA/QC requirements. The TSD describes the options considered. The monitoring and QA/QC requirements differ from the TRI program given the different objectives of that program and mandatory greenhouse gas reporting rule. See section II.N of this preamble for the response on the emissions verification approach.

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<sup>1</sup> IPCC, 2006. [http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2\\_Volume2/V2\\_1\\_Ch1\\_Introduction.pdf](http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf)

Subpart A (General Provisions) of final rule (Section 98.3) outlines general monitoring and verification requirements for all reporting facilities. Subpart EE (Titanium Dioxide) outlines the specific “Monitoring and QA/QC Requirements” (Section 98.314) requirements for titanium dioxide production facilities. These procedures are required for EPA verification of the reported emissions.

In addition, facilities should refer to Subpart C (General Stationary Combustion) (98.34) for reporting combustion related CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O for the relevant QA/QC requirements for reporting of combustion emissions at these facilities. We believe that the listed QA/QC procedures are necessary to ensure accurate accounting, reporting, and verification the of emissions data.

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#### 4. PROCEDURES FOR ESTIMATING MISSING DATA

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**Commenter Name:** Sarah B. King

**Commenter Affiliation:** DuPont Company

**Document Control Number:** EPA-HQ-OAR-2008-0508-0604.1

**Comment Excerpt Number:** 51

**Comment:** DuPont disagrees with the following proposed regulatory language and the supporting statements in the preamble on page 16552, section EE.4: “It is assumed that a facility would be able to supply data on annual calcined petroleum coke consumption data. Therefore, 100 percent data availability is required for all parameters.” This is an incorrect assumption. There can be numerous reasons data may not be available, on time, or in the format EPA requires; e.g. incorrectly calculated vendor reports that are undetected, late submittals by vendors, computer malfunctions or failures, etc. In cases where a required record is found to be missing or determined to be incorrect, EPA should provide a procedure for estimating missing data. However, in §98.315 – Procedures for estimating missing data, EPA provides no such missing data procedures. We note that in many other rules, and even in this proposed rule, EPA recognizes that documents can be misplaced and data can be lost or incorrect (i.e., not meeting quality assurance criteria). In this proposed rule, EPA provides in Subpart C procedures for missing data: “ § 98.35 Procedures for estimating missing data. “Whenever a quality-assured value of a required parameter is unavailable (e.g., if a CEMS malfunctions during unit operation or if a required fuel sample is not taken), a substitute data value for the missing parameter shall be used in the calculations.. “(2) For missing records of stack gas flow rate, fuel usage (emphasis added), and sorbent usage, the substitute data value shall be the best available estimate of the flow rate, fuel usage, or sorbent consumption, based on all available process data (e.g., steam production, electrical load, and operating hours). The owner or operator shall document and keep records of the procedures used for all such estimates.” It is inconsistent for EPA to recognize the potential for missing data in one instance and deny a procedure for missing data in a subsequent paragraph of the same rule. A more realistic approach to § 98.3 15 would be to alter the language to read as follows: “ § 98.315 Procedures for estimating missing data. “Whenever data of petroleum coke consumption is unavailable, a substitute value for the missing consumption shall be used. The best available estimate of petroleum coke consumption shall be determined using all available information (e.g. process data, coke consumption per mass of production, previous consumptions versus production rates, etc.). The owner or operator shall document and keep records of the procedures used for all such estimates.”



**Response:** The response to this comment has been provided section III of the preamble to this rule (see section EE, Titanium Dioxide). We agree that there may be missing data and have added procedures for estimating missing data to section 98.315.

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**Commenter Name:** Lorraine Krupa Gershman

**Commenter Affiliation:** American Chemistry Council (ACC)

**Document Control Number:** EPA-HQ-OAR-2008-0508-0423.2

**Comment Excerpt Number:** 138

**Comment:** ACC supports the use of alternative emission estimates where continuous monitoring is not in use. However, we disagree with the proposed regulatory language and the supporting statements in the preamble on page 16552, section EE.4: “It is assumed that a facility would be able to supply data on annual calcined petroleum coke consumption data. Therefore, 100 percent data availability is required for all parameters.” This is an incorrect assumption. There can be numerous reasons why data may not be available, may not be timely, or in the format EPA requires; e.g., incorrectly calculated vendor reports that are undetected, late submittals by vendors, computer malfunctions or failures, etc.) In cases where a required record is found to be missing or determined to be incorrect, we recommend that EPA provide a procedure for estimating missing data in §98.315 – Procedures for estimating missing data. We note that in many other rules, and even in this proposed rule, EPA recognizes that documents can be misplaced and data can be lost or incorrect (i.e., not meeting quality assurance criteria). In this proposed rule, EPA provides in Subpart C procedures for missing data, including fuel usage data, in 98.35(b)(2): “(2) For missing records of stack gas flow rate, fuel usage (emphasis added), and sorbent usage, the substitute data value shall be the best available estimate of the flow rate, fuel usage, or sorbent consumption, based on all available process data (e.g., steam production, electrical load, and operating hours). The owner or operator shall document and keep records of the procedures used for all such estimates.” It is inconsistent for EPA to recognize the potential for missing data in one instance and deny a procedure for missing data in a subsequent paragraph of the same rule. A more realistic approach to §98.315 would be to revise the rule language as follows: “Whenever data of petroleum coke consumption is unavailable, a substitute value for the missing consumption shall be used. The best available estimate of petroleum coke consumption shall be determined using all available information (e.g., process data, coke consumption per mass of production, previous consumptions versus production rates, etc.). The owner or operator shall document and keep records of the procedures used for all such estimates.”

**Response:** The response to this comment has been provided section III of the preamble to this rule (see section EE, Titanium Dioxide).

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## **5. DATA REPORTING REQUIREMENTS**

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**Commenter Name:** Curt DeMille

**Commenter Affiliation:** Titanium Dioxide Stewardship Council (TDSC)

**Document Control Number:** EPA-HQ-OAR-2008-0508-0486.1

**Comment Excerpt Number:** 1

**Comment:** TiO<sub>2</sub> manufacturers, as well as the industries for which TiO<sub>2</sub> is a raw material, are highly competitive businesses -- both domestically and internationally. We are concerned that the level of information to be reported, and considered available for public distribution, could put the domestic TiO<sub>2</sub> producers at a disadvantage relative to international producers. We do not believe that the protections made available through claims of Confidential Business Information (CBI) briefly outlined in the preamble are adequate to safeguard the proprietary technical and financial positions of our members.

The TDSC regards the ancillary data inputs contemplated by the Rule -- annual production of TiO<sub>2</sub>, annual amount of calcined petroleum coke consumption, and number of operating hours in the calendar year -- as CBI. Industry participants do not provide these data in any public forum and these data should not be in the public domain. Further, industry as a whole also views information of this type as proprietary as evidenced by other comments submitted to this docket. [Footnote: Public Hearing: Proposed Rulemaking for Mandatory Reporting of Greenhouse Gases Transcript of Day One of Two (Apr. 6, 2009); Comments of Georgia Mining Association (May 15, 2009); Pulp and Paper: American Forest & Paper Association (AF&PA) 2008 Memorandum from Rhea Hale (May 22, 2009); USEPA Meeting -- American Chemistry Council (ACC) (May 26, 2009)].

**Annual Production of TiO<sub>2</sub>:** Actual annual output from any manufacturing operation can vary from year to year and differ significantly from “nameplate” capacity, based on a number of economic and technical elements. This information can allow competitors and others to infer operational strengths and weaknesses. Providing such information compromises a facility’s competitive position.

**Annual Amount of Petroleum Coke Consumed:** Petroleum coke is a significant cost item to any Chloride Process TiO<sub>2</sub> plant. To anyone schooled in the industry, pet coke consumption, coupled with annual production levels, provides significant insight into a facility’s operating efficiency, cost structure, and profitability. Further, reporting consumption of pet coke does not directly relate to greenhouse gas emissions because it does not account for any control device used to mitigate emissions generated from the combustion.

**Operating Hours per Calendar Year:** Together with annual output, operating hours also provide an accurate picture of facility efficiency and a basis for comparing strengths and weaknesses within the industry.

**Reporting Alternatives:** Since the goal of this proposed regulation is the regulation of greenhouse gas emissions, we believe that reporting should be specifically limited to greenhouse gasses alone. This value will not lead to the unintentional release of CBI, whereas reporting values for the Annual Production of TiO<sub>2</sub>, Annual Amount of Petroleum Coke Consumed, and Operation Hours per Calendar Year represent CBI which, if released, will significantly harm our members’ ability to operate competitively.

The TDSC urges EPA to consider employing one of the successful reporting protocols from other agency programs to satisfy the reporting requirements under this Rule. Discharge Monitoring Reports under the National Pollutant Discharge Elimination System, stack testing under the Clean Air Act, and reporting for the Toxics Release Inventory (TRI) are a few examples. Under these protocols, the regulated community is required to keep records supporting the report inputs. Limited operational data are reported to EPA and operational data are not posted to public forums, however. Industry is accustomed to working within these input

methodologies and the regulated community's learning curve would not be steep. Burden (cost and time) could be lower than contemplated in the Rule. Each of these example protocols has proven to be workable; each provides reliable data for relevant agencies and the public; and each includes safeguards to ensure data integrity.

**Response:** The response to this comment has been provided section III of the preamble to this rule (see section EE, Titanium Dioxide). The goals and objectives of the mandatory greenhouse gas reporting rule are different from the programs the commenter references, and therefore, so are the reporting and record keeping requirements.

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**Commenter Name:** Sarah B. King

**Commenter Affiliation:** DuPont Company

**Document Control Number:** EPA-HQ-OAR-2008-0508-0604.1

**Comment Excerpt Number:** 52

**Comment:** DuPont disagrees with the proposal to require the documentation records and data submission identified in §98.3 16 and referenced on page 16552, section EE.5 of the preamble: "In addition we propose that facilities report the following additional data used as the basis of the calculations to assist in verification of estimates, checks for reasonableness, and other data quality considerations. The data includes: annual production of titanium dioxide, annual amount of calcined petroleum coke consumed, and number of operating hours in the calendar year." In particular, the annual amount of petroleum coke consumed and number of annual operating hours in the calendar year are considered Confidential Business Information that could be used by competitors (U.S. and foreign) and are unnecessary to carry out the purposes of this proposed regulation. This data should only be available onsite or offsite (e.g. a centralized location), or as requested for security cleared EPA personnel and their security cleared contractors where a need is demonstrated for the purposes of this inventory. To the extent that total covered facility annual production of titanium dioxide is required to accomplish the requirements of climate change legislation provisions, e.g., provisions to grant allowances to energy intensive trade exposed facilities, reporting of that data on a total facility basis is supportable. However, if such legislative requirements are not in place, there is no need for reporting of production data. We also disagree that there is a need within the purposes of this rule for any of the information identified in § 98.316 to be reported broken out by production line. Reporting of data should be on a total facility basis only, with individual line data available only as needed for verification purposes.

**Response:** The response to this comment has been provided section III of the preamble to this rule (see section EE, Titanium Dioxide).

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**Commenter Name:** Lorraine Krupa Gershman

**Commenter Affiliation:** American Chemistry Council (ACC)

**Document Control Number:** EPA-HQ-OAR-2008-0508-0423.2

**Comment Excerpt Number:** 139

**Comment:** ACC also disagrees with the proposal to require the documentation records and data identified in §98.3 16 and referenced on pages 16552, section EE.5 of the preamble: "In addition we propose that facilities report the following additional data used as the basis of the calculations to assist in verification of estimates, checks for reasonableness, and other data quality

considerations. The data includes: annual production of titanium dioxide, annual amount of calcined petroleum coke consumed, and number of operating hours in the calendar year.” We disagree that there is a need within the purposes of this rule for any of the information identified in §98.316 to be reported specifically by production line. All of the aforementioned information is CBI that could be used by competitors (U.S. and foreign) and is unnecessary to carry out the purposes of this proposed regulation.

**Response:** The response to this comment has been provided section III of the preamble to this rule (see section EE, Titanium Dioxide).

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## **6. RECORDS THAT MUST BE RETAINED**

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**Commenter Name:** Sarah B. King

**Commenter Affiliation:** DuPont Company

**Document Control Number:** EPA-HQ-OAR-2008-0508-0604.1

**Comment Excerpt Number:** 53

**Comment:** §98.317 – Although the proposed rule at § 98.3(g) Recordkeeping and § 98.3 17 Records that must be retained, does not specifically require that records be maintained on-site, the preamble does indicate such intent: “A full list of records that must be retained onsite is included in proposed 40 CFR part 98, subparts A and EE. ” (preamble page 16553, section EE. 6) DuPont uses central purchasing systems including offsite data and filing systems for material purchases including coke. These purchase order copies, etc. are not available from the site as the central groups only provide the summary data in plant cost sheets. EPA should revise the regulation to require the sites to provide the data with reasonable notice (at least two weeks).

**Response:** In the final rule, language was added to clarify that records may be retained off site if the records are readily available for expeditious inspection and review. The rule does not prescribe a specific time limit for advance notice because the determination of what constitutes a “reasonable notice” can vary depending on individual circumstances. See also the preamble and separate comment response document volume II.I for the response on the general recordkeeping requirements.

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## **7. OTHER COMMENTS**

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**Comment:** Generally across the rule, commenters requested clarification on use of standards and in some cases proposed alternative standards for determining particular parameters used to estimate emissions.

**Response:** For Subpart EE, we decided to specify the use of a specific ASTM standard for a key calculation parameter (carbon contents of calcined petroleum coke) and allow flexibility for other key parameters. EPA has not prescribed specific methods, but provided guidance, for determining the quantity of coke consumed, requiring that facilities use methods and/or plant instruments used for accounting purposes. Where we have prescribed specific methods, there are few methods that are appropriate. For example, there are two generally accepted standards that must be used for estimating carbon contents of calcined petroleum coke. We have prescribed

those two standards commonly used by industry and also allow supplier information for this determination to minimize burden. For the purposes of this rulemaking, use of these methods ensures consistency in the determination of key parameters and calculated emissions from the titanium dioxide production industry.